

[0052] Figs. 7A through 7D are screen shots depicting an example of a direct-dial operation according to one embodiment of the present invention, where feedback for two operations is displayed concurrently when appropriate.

[0053] Figs. 8A through 8E are screen shots depicting an example of a directory lookup operation according to one embodiment of the present invention, where a directory filtering operation is initially assumed.

[0054] Figs. 9A through 9D are screen shots depicting an example of a direct-dial operation according to one embodiment of the present invention, where a directory filtering operation is initially assumed.

[0055] The figures depict a preferred embodiment of the present invention for purposes of illustration only. One skilled in the art will readily recognize from the following discussion that alternative embodiments of the structures and methods illustrated herein may be employed without departing from the principles of the invention described herein.

Detailed Description of the Preferred Embodiments

[0056] For illustrative purposes, the invention will be described in the context of a personal digital assistant (PDA) that provides functionality for direct-dialing of telephone numbers, as well as directory lookup. Accordingly, the invention is described as a mechanism for allowing the user to direct-dial a telephone number or to perform directory lookup, without first specifying which of the two operations he or she wishes to perform. In alternative embodiments, the invention

provides directory filtering in multiple contexts concurrently, such as by permitting a user to filter directory records by any of a number of search criteria (including stored fields, derived fields, combination fields, and the like) without first specifying which criterion is being searched on. Such functionality may or may not be combined with direct-dial capability as well. One skilled in the art will recognize that many variations are possible, and that the particular embodiment described herein should not be considered to limit the scope of the invention in any way.

Device and Keyboard

[0057] Referring now to Fig. 1, there is shown PDA device 100 for practicing the present invention according to one embodiment. As is known in the art of such devices, PDA device 100 includes directory lookup and directory filtering functionality. In one embodiment, device 100 also includes cellular telephone technology for dialing, initiating, and receiving telephone calls, though such technology is not required for practicing the present invention. One skilled in the art will recognize that the present invention may be implemented in other devices or types of devices, including but not limited to: handheld, laptop, or desktop computers; cellular telephones; Internet appliances; and the like. In fact, the invention may be implemented in any device in which multiple-context searches are desired.

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[0058] Device 100 includes keyboard 101 for accepting input from the user, and screen 102 for providing output and for presenting a user interface to the user. Keyboard 101 accepts alphabetic and numeric input, and further accepts commands from the user to activate various functions, scroll the display, and the like. In one embodiment, screen 102 may be a touch screen that accepts input from the user by detecting positioning of a stylus or finger. Thus, for example, a user could select a displayed record by touching screen 102 at the appropriate location. Other keystroke entry devices or character entry devices may also be employed. The use of the word "keystroke" in this patent is intended to cover any character that is entered using any input devices, and is not limited to a particular embodiment for entering character data.

[0059] Techniques for the input and output components of PDA device 100 are well known in the art. Scroll up button 104 and scroll down button 103 perform scrolling functions for navigating through on-screen data and commands.

[0060] In one embodiment, PDA device 100 runs software that controls the operation of the device including input, output, and directory lookup and filtering operations. The functionality described herein may therefore be embodied in software that runs on PDA device 100 and that causes PDA device 100 to function in a particular manner to implement the invention. In one embodiment, the software runs in an operating system environment, such as for example the PalmOS Operating System (or a variant thereof).